

SCH 4U Reactions of Organic Compounds Modeling Activity

Part Two:

Elimination

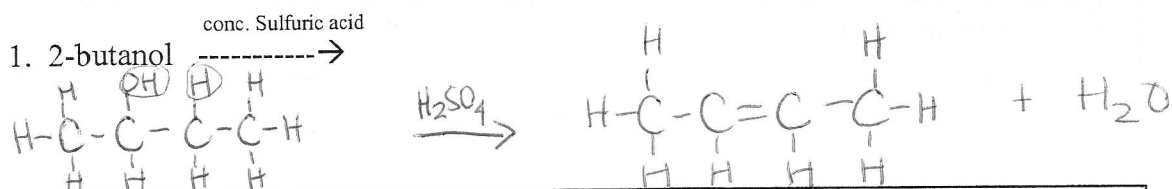
Oxidation

Esterification (Condensation)

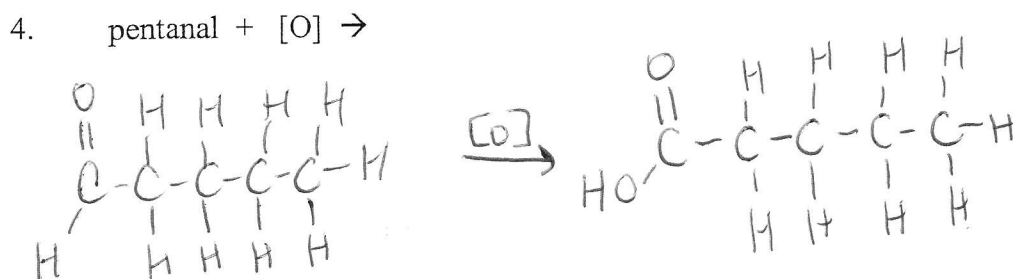
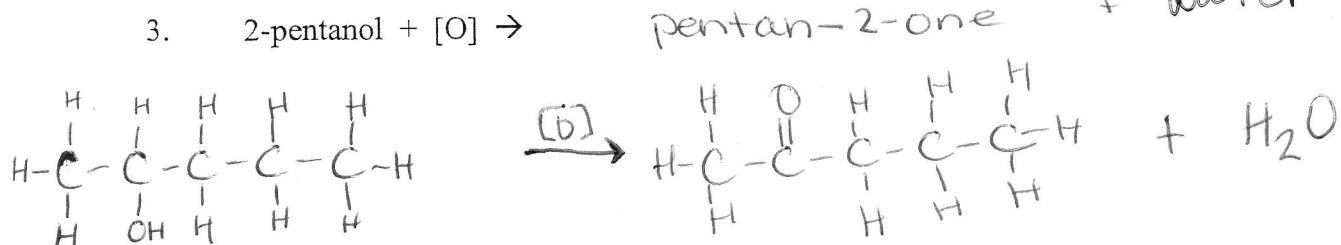
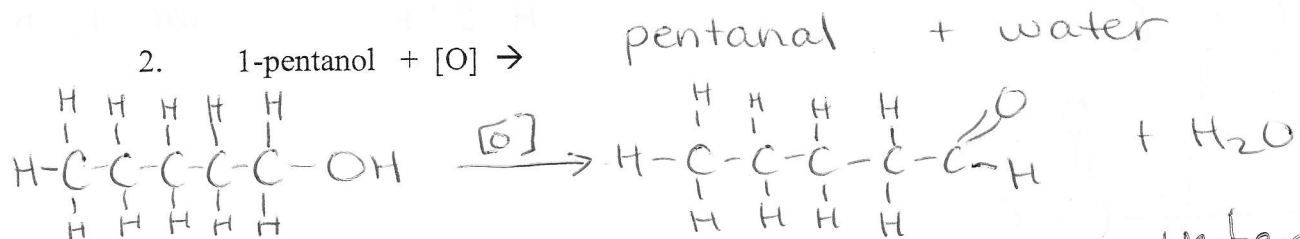
Hydrolysis

**Build the following examples, and draw out the structural equation.
Finish the word equation.**

Elimination: Removal of water from an ALCOHOL to make an ALKENE
Concentrated Sulfuric acid is needed as a catalyst



Oxidation: oxygen atom is used to reduce the number of C-H bonds. Water is a byproduct after the first oxidation. **When an aldehyde is oxidized to a carboxylic acid, there is no other product.
Oxidizing agents may be KMnO_4 or $\text{K}_2\text{Cr}_2\text{O}_7$, but is symbolized by $[\text{O}]$



SCH 4U Reactions of Organic Compounds Modelling Activity

Part One:

Substitution

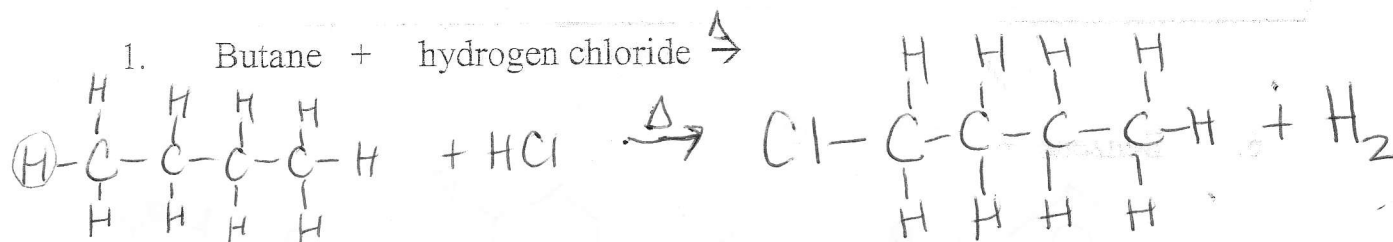
Addition (halogenation, hydrogenation, hydrohalogenation, hydration)

Build the following to visualize the reactions. Draw out the structural equation, and finish the word equation.

****REMEMBER THAT HYDROGEN OXYGEN AND HALOGENS ARE ALL DIATOMIC ELEMENTS!!**

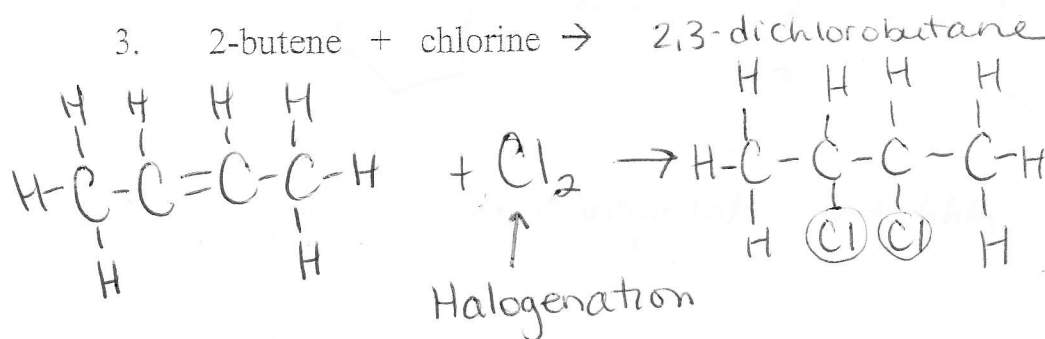
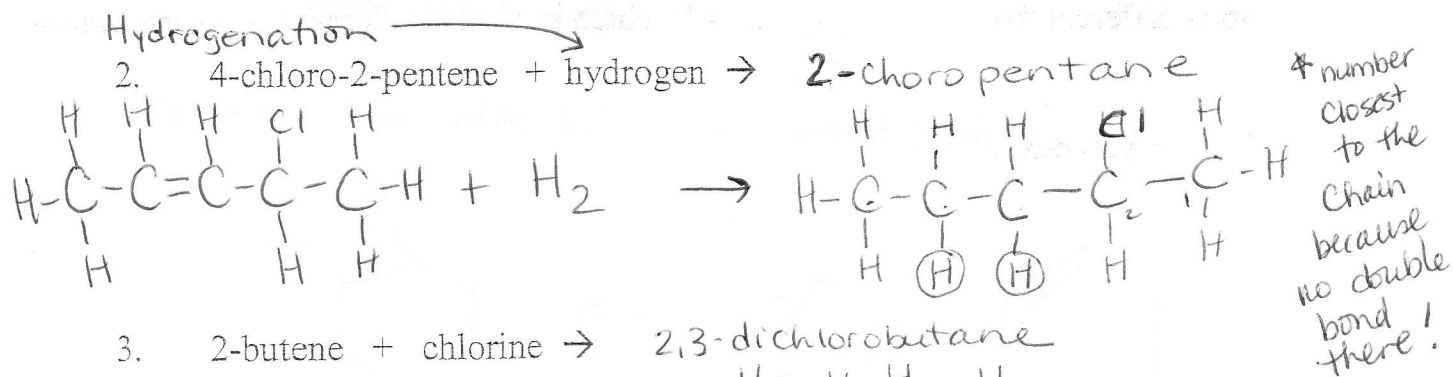
SUBSTITUTION REACTIONS (for Alkanes)

A Hydrogen atom is REPLACED by another atom or group of atoms.
Requires heat, or ultraviolet radiation.

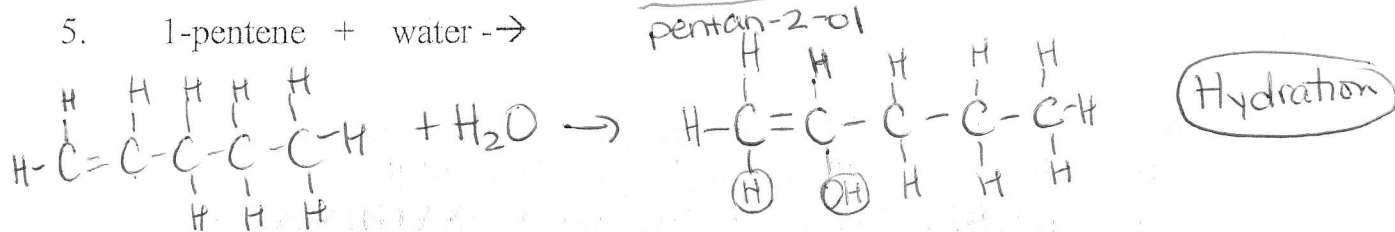
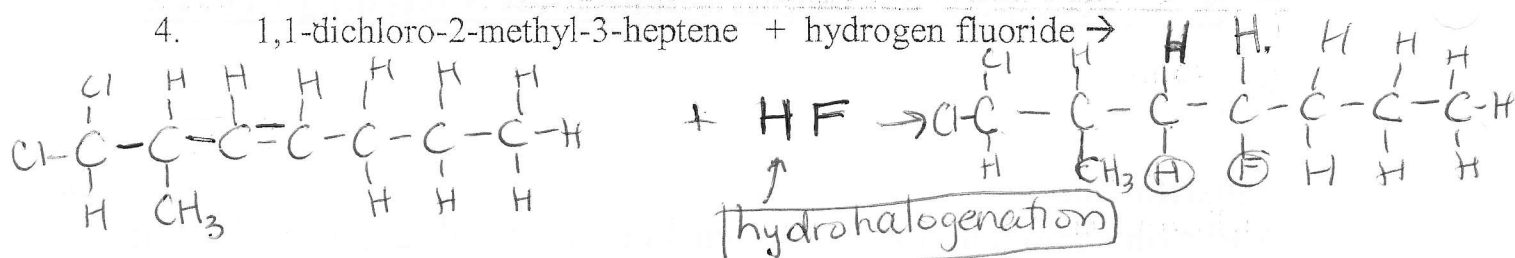


ADDITION REACTIONS (for Alkenes and Alkynes)

A small molecule is ADDED to the double or triple bond with NO LOSS OF HYDROGEN atoms.



4-fluoro
1,1-dichloro-2-methyl
heptane



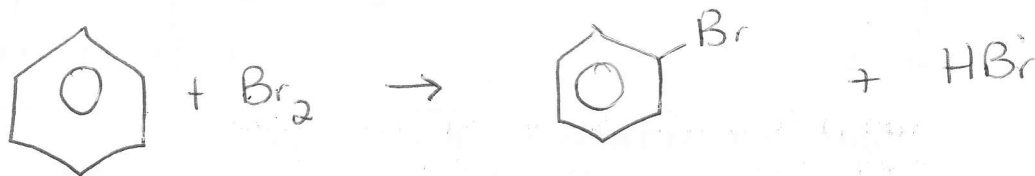
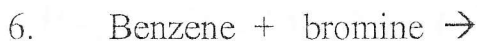
"the rich get richer" MARKOVNIKOV'S RULE

SUBSTITUTION REACTIONS (for Aromatics)

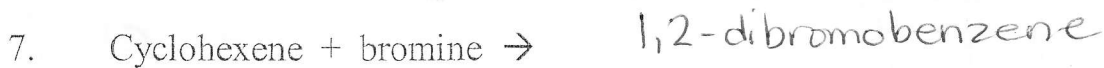
A Hydrogen atom is REPLACED by another atom or group of atoms.

Unlike Alkenes, Aromatic hydrocarbons under

SUBSTITUTION reactions, NOT ADDITION REACTIONS!!



#6 is different from the following; (#7) which is a cyclic alkene (undergoing addition):



Addition: Halogenation